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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/916,700	07/27/2001	Hiroshi Yamamoto	49084 DIV (70904)	9052

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EXAMINER
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WILSON, DONALD R

ART UNIT	PAPER NUMBER
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1713

10

DATE MAILED: 06/20/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/916,700

Applicant(s)

YAMAMOTO ET AL.

Examiner

Donald R Wilson

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 14-19 and 21-29 is/are pending in the application.
- 4a) Of the above claim(s) 25 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 14-19, 21-24 and 26-29 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.  
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 1,2. 6) ☐ Other:

**DETAILED ACTION**

***Response to Restriction/Election of Species Requirement***

1. Applicant's election without traverse of the inventions of Group I, now Claims 14-19 and 21-29, in Paper No. 6 is acknowledged.

2. Applicant's further election of the species of:

- a. acrylic acid as the active-hydrogen compound,
- b. ethylene oxide as the heterocyclic or aldehyde, and
- c. the copolymer of N,N-diallylamine hydrochloride and N,N,N-triallylamine hydrochloride (as described in Embodiment 5) as the polymeric gel,

in Paper No. 9 is also acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

3. Claim 25 is withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected specie of the invention.

***Claim Rejections - 35 USC § 102(b)/§ 103(a)***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.

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3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

7. **Claims 14-19, 21-24 and 26-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wheeler, Clayton, Rabon or Pike, each in view of Battaerd'481.**

8. The hydroxyalkylation of carboxylic acids such as hydroxyethylation of acrylic acid, with basic anionic exchange resins is well known as for instance is taught by Wheeler, Clayton, Rabon or Pike (col. 1, lines 11-15, 39-45 and Example II; col. 1, lines 62-67 and Example 1; col. 1, lines 62-67 and Example 3; and col. 1, lines 24-35 and col. 1, line 48 to (col. 2, lines, line 9, respectively). It is further noted that Wheeler specifically teaches the use of an ion exchange resin which is the product of a heterocyclic tertiary nitrogen base, which would thus have a cyclic amine or ammonium structure (col. 1, lines 46-61). Additionally, Clayton also teaches an advantage to having a swelling capacity of about 75 to about 250% (col. 1, lines 37-47). Wheeler, Clayton, Rabon or Pike are each deficient in not teaching as the catalyst, an ion exchange resin of the elected specie of a copolymer of N,N-diallylamine hydrochloride and N,N,N-triallylamine hydrochloride.

9. However, basic anion exchange resins based upon polymers and copolymers of allyl amines are well known as for instance is taught by Battaerd'481. Battaerd'481 discloses the preparation of resin particles prepared from 3-100 mole% triallylamine and a balance of at least one allyamine comonomer, (col. 3, line 64 to col. 5, line 17). Copolymers of triallylamine and diallylamine are specifically disclosed and exemplified (col. 4, lines 69-75, Examples 60-63).

10. As a broad range of basic anion exchange resins are taught to be useful as catalysts in the hydroxyethylation of acrylic acid as taught by Wheeler, Clayton, Rabon or Pike, and lacking a showing of criticality for the ion-exchange resins of the instant invention, it would have been obvious to one of ordinary skill in the art employ the triallylamine/diallylamine based ion-exchange resins as taught by Battaerd'481, with an expectation of equivalent success.

11. As the polymers are the same as those of the instant invention and form crosslinks during polymerization they would be expected to swell in solvents, such as in the instant invention, and exhibit swell ratios such as specified in Claim 18. It would also be expected that the thermal decomposition

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temperature would be an inherent property of the of triallylamine/diallylamine copolymer and thus would reasonably be expected to be within the limits of instant Claim 19.

It has been held that where applicant claims a composition in terms of function, property or characteristic where said function is not explicitly shown by the reference and where the examiner has explained why the function, property or characteristic is considered inherent in the prior art, it is appropriate for the examiner to make a rejection under both the applicable section of 35 USC 102 and 35 USC 103 such that the burden is placed upon the applicant to provide clear evidence that the respective compositions do in fact differ. *In re Best*, 195 USPQ 430, 433 (CCPA 1977); *In re Fitzgerald et al.*, 205 USPQ 594.

12. **Claims 14-16, 21-24 and 26-27 are rejected under 35 U.S.C. 102(b) as being anticipated by Wheeler.**

13. Wheeler anticipates the instantly claimed invention for non-elected species of the polymer gel. This rejection is included because Wheeler is used in the above rejection. As noted above Wheeler specifically teaches the use of an ion exchange resin which is the product of a heterocyclic tertiary nitrogen base, which would thus have a cyclic amine or ammonium structure.

#### **Obviousness Double Patenting Rejection**

14. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

15. A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

16. Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

17. **Claims 14-19, 21-24 and 26-29 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 9 of copending Application No. 09/880,876, now allowed.** Although the conflicting claims are not identical, they are not patentably distinct from each other because the instant claims are generic to allowed claim 9 of the copending application.

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18. This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

***Art of Interest/Technological Background***

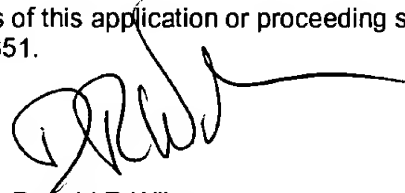
19. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Bolto'724 or Battaerd'576 also teach triallylamine based ion-exchange resins and could also be used as secondary references in a rejection of the instant claims. Gurgiolo also teaches hydroxyalkylation of carboxylic acids with basic ion exchange resins and could be used as a basis for an obviousness rejection of the instantly claimed subject matter.

***Future Correspondence***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Donald R Wilson whose telephone number is 703-308-2398.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu can be reached on 703-308-2450. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications. The unofficial direct fax phone number to the Examiner's desk is 703-872-9029.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 308-2351.



Donald R Wilson  
Primary Examiner  
Art Unit 1713